

Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application. Any amendments or cancellations are made without prejudice or disclaimer.

Listing of Claims:

1. (Cancelled)
2. (Previously presented) An isolated protein that has glycerol kinase activity, the protein comprising the following physical and chemical properties:
 - (1) the activity of the protein has the ability to modify glycerol, in the presence of ATP, to glycerol-3-phosphoric acid;
 - (2) the activity of the protein is optimal at a pH of about 10.0;
 - (3) the activity of the protein is optimal at a temperature of about 50°C in a reaction carried out for five minutes in the presence of 20 mM HEPES buffer at a pH of about 7.9;
 - (4) at least 90% or more of the activity of the protein is retained after incubation of the protein at 25°C for two hours at a pH of about 6.0 to about 10.0;
 - (5) at least 90% or more of the activity of the protein is retained after incubation of the protein for about 15 minutes in 50 mM potassium phosphate buffer at a pH of about 7.5;
 - (6) the protein contains a subunit that has a molecular weight of about 55,000 daltons as determined by sodium-dodecyl sulfate polyacrylamide gel electrophoresis or the intact protein has a molecular weight of about 176,000 daltons as determined by gel filtration;

(7) the glycerol kinase activity has a K_m of about 6.9×10^{-6} M for glycerol and a K_m of about 1.11×10^{-4} M for ATP;

(8) the protein has a relative activity of about 41.2 Units/mg; and

(9) at least 70% or more of the kinase activity of the protein is retained when the protein is incubated for one week at 25°C in the presence of 100 mg/L of N-methylisothiazolone or derivatives thereof.

3. (Cancelled)

4. (Previously presented) The isolated protein according to claim 2, which is a protein of (a) or (b) below:

(a) a protein consisting of an amino acid sequence represented by SEQ ID NO:1 in the Sequence Listing; or

(b) a protein comprising the amino acid sequence of (a), wherein one or several amino acids are deleted, substituted or added and having glycerol kinase activity.

5-12. (Cancelled)

13. (New) An isolated protein that (a) consists of the amino acid sequence depicted in SEQ ID NO:1 or (b) comprises the amino acid sequence of (a) in which one or several amino acids are deleted, substituted, or added, wherein the isolated protein has glycerol kinase activity.

14. (New) The isolated protein of claim 13, wherein at least 70% or more of the glycerol kinase activity of the protein is retained when the protein is incubated for one week at 25°C in the presence of 100 mg/L of N-methylisothiazolone or derivatives thereof.

15. (New) The isolated protein of claim 13, wherein at least 92% or more of the kinase activity of the protein is retained when the protein is incubated for one week at 25°C in the presence of 100 mg/L of N-methylisothiazolone or derivatives thereof.

16. (New) The isolated protein of claim 13, wherein the protein consists of the amino acid sequence depicted in SEQ ID NO:1.